

Tighten Up

The missus drives a Honda Accord. It's an '88, four door, five speed. Not a bad little car. Reliable. Dependable. All the things mother likes in a car.

The Accord's suspension is also a model

of practicality. When driven by a sensible individual like my wife, it offers a comfortable ride and handles with reasonable (although uninspired) manners.

When someone more...well let's say spirit-

ed...like me...drives the car a bit harder than he should, the Honda has a tendency to roll and get slightly tail happy. So we've decided to exercise our options and see if we can't tighten up the Accord suspension without turning its ride quality into something resembling that of a weight bench. Both auto repair and marriage are often matters of compromise.

Some of the car's current handling characteristics may be attributable to the ravages of five Ohio winters, complete with a steady diet of potholes by the hundreds. There seems to be some increased play in the front upper control arm bushings that wasn't there before. A mild clunk over small bumps (accompanied by an annoying squeak) is becoming more evident in the same area of the suspension. The factory shocks? Well they ain't what they used to be.

The other limitation came from the factory — or should I say didn't come from the factory? While this LX version came equipped with a front stabilizer bar, the absence of a rear stabilizer becomes evident with hard driving. Combine a hard turn and a large bump in the pavement, and the tail of the Accord moves up and over like a carriage return on an electric typewriter.

So Why Are We Doing This?

Suspension components are some of the most ignored parts of any car. Shocks, springs,

and bushings take a constant beating. And unless they break or blow out completely, they get soft so gradually that many drivers don't notice the change. Few customers are anxious to spend any money replacing parts that aren't causing serious problems. Most will ignore anything they can't see, touch, or smell.

So much for sensory perception.

But they will pay for things like stereos, fog lamps, and floor mats. So why not sell suspension work as an upgrade — an option? This is a great place to compete with the new car dealer for customer pay work. You can tighten up the suspension for the harder driving members of the family, and keep the ride quality at levels which are acceptable to the more sedate drivers in the household who also use the car.

Our project will include the following repairs, replacements, and mild suspension upgrade:

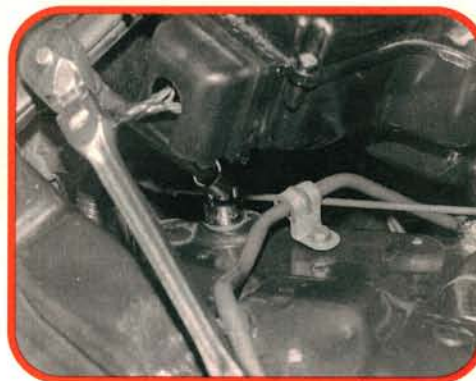
- Replacement of the front upper control arm sleeves and bushings with OE parts. Add in an unanticipated replacement of the lower rear shock bushings and bolts. Honda Motor Company, **Circle No. 200.**
- Installation of four new KYB gas filled shocks. KYB, **Circle No. 201.**
- Addition of a rear stabilizer bar available from ADDCO Industries, **Circle No. 202.**

—By Ralph Birnbaum



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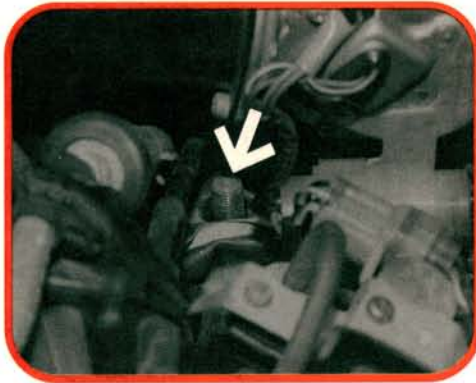
We've received some reports of broken front springs on Accords, so if the car comes in as a "Low Rider" check the upper area of the spring for a cracked coil. Our car still passes muster for ride height, and there's no abnormal tire wear. We anticipate reusing the springs, and do.



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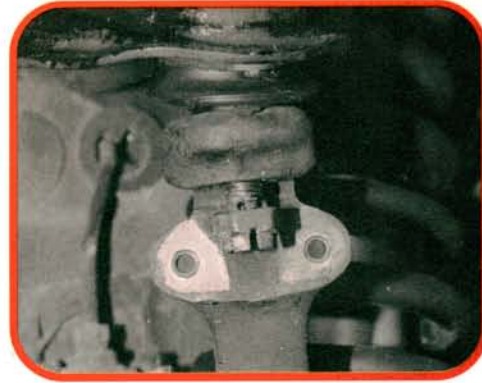
We suspect problems with the upper control arm bushings. Like Joe Namath's knees, they're getting loose and creaky. The arms are short, and bolt to the fender well inboard. To reach the right rear nut on the control arm anchor bolt, we unbolt the "vacuum box" and lift it up far enough to make some working room.

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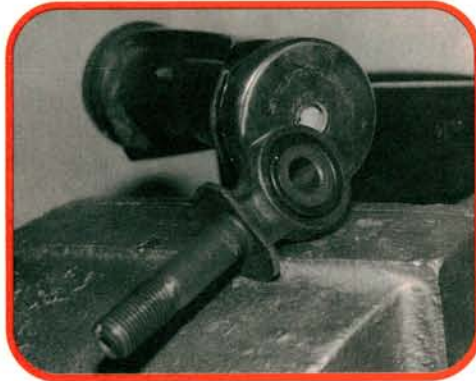
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On the left side, access to the rear nut on the control arm anchor bolt is also somewhat limited. You can reach back under the wiper motor with an extension and a swivel socket to remove the rear nut without removing any additional parts. But space is tight. Now it's time to move out under the fender.



4

The ball joint stud at the outer end of the control arm is protected by a small metal shield. It's held in place by two small bolts. After removing the shield, we remove the cotter pin and the castle nut on the ball joint stud. We use a suitable ball joint tool (not a pickle fork) to pop the joint loose.



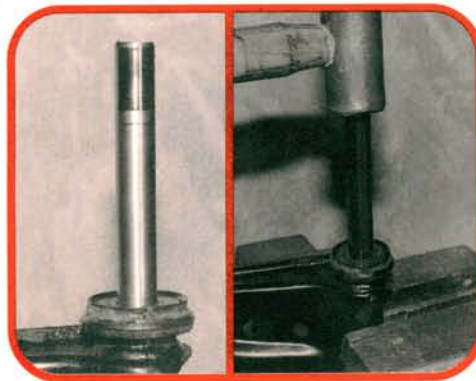
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Place the control arm in a vise. Remove the through-bolt which holds the bushing assembly together. The eyelets in the anchor bolts have a small groove in them for an o-ring which seals them against the outside face of the seal caps. Clean the grooves, and replace the o-rings.



6

Pop off the steel caps which protect the bushing seals. Clean away any debris from the inside of the caps and inspect them for wear. Our caps are in good shape and can be reused. But we will replace the bushing seals which are held captive by the control arm bushings themselves.



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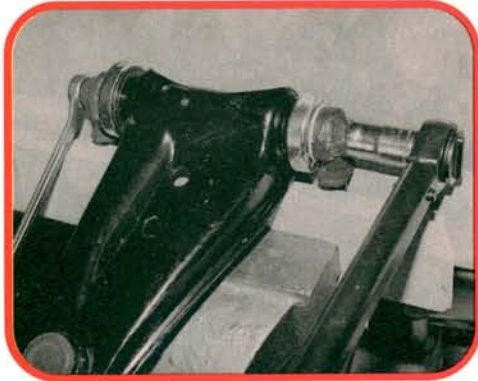
Now push out the old steel sleeve which passes through the bushings. This sleeve shows the wear pattern that's developed on the contact area where it rides in the bushings. Use a long punch and hammer to drive out the old bushings. Don't gouge the bore in the arm where the bushings ride.



8

With the old bushings removed, we clean away all the old grease and grime. Then we install new grease seals on the control arm ends, and press in new bushings. Everything gets a coating of waterproof multi-purpose grease. There aren't any grease fittings, so this step is important.

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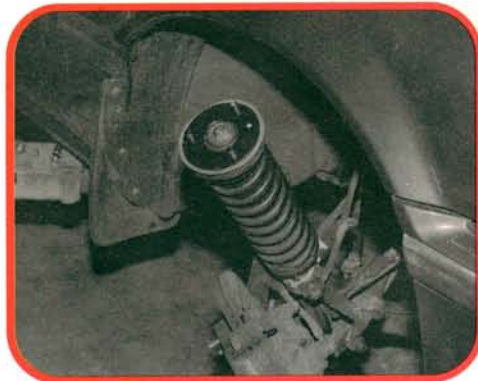
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Install the end caps, anchor studs, and through-bolt. If you align the anchor studs and clamp them between blocks of wood as you tighten the bolt, they'll be properly aligned for reinstallation. Use a new locking nut, and torque the through-bolt to 55 Nm. The ball joint nut torques to 44 Nm.



10

It took some unique suspension packaging to fit everything under the Accord's sloping front profile. The lower half of the strut is shaped like a wishbone (called a damper fork by Honda). It straddles the drive axle to save precious space. But the upper control arm bolts to the knuckle, not the strut.



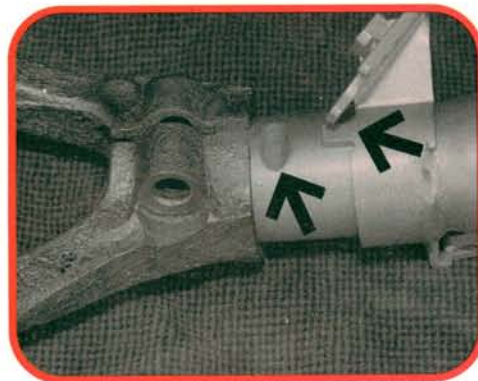
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The shop manual suggests removing the entire strut assembly to replace the shocks. You can do so if you wish, but we were able to unbolt the strut caps, and swing the assemblies down and away until they popped out as shown. If you do it this way, be careful not to stress the brake hoses!



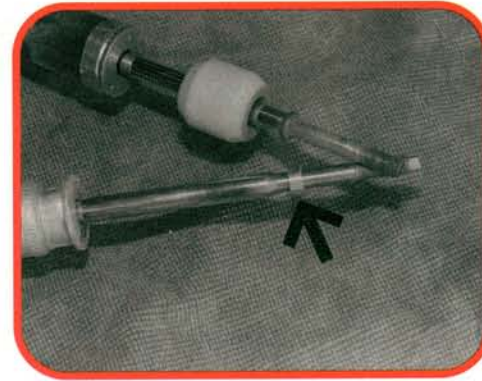
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Whether you remove the strut assembly from the car or not, you'll need to unbolt the brake hoses from their retainer brackets. Notice how they wrap around the strut assembly? The hoses are fastened at two points, and must be properly reinstalled later. Again, treat the hoses gently.



13

The shocks fit into pinch sockets in the damper forks. They are indexed with a small metal tab which fits in the pinch slot (arrow). A pinch bolt then passes through both the socket and a slot in the base of the shock tube (arrow). This aligns and secures the shock in the tube.



14

Old and new. We've disassembled the strut assembly, and begin transferring "pieces parts." The KYB shocks come with a small collar which must be installed on the new shock (arrow). The enclosed instructions didn't mention this. The collar is used to locate the snubber which we transfer.

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It's important to keep the upper strut cap properly indexed as you go back together, or the strut cap mounting bolts won't align with the holes in the strut tower. We used the mark left in the strut cap rubber by the spring as a reference, and added paint marks to the cap and spring to guide us.



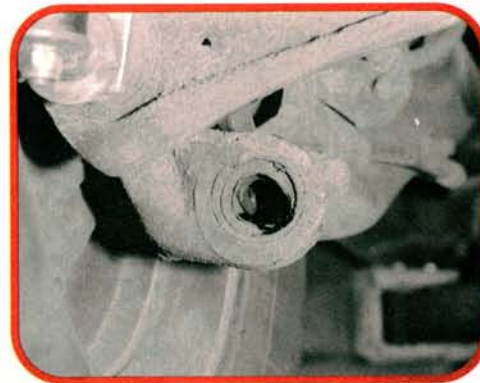
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Tighten the strut mount nuts to 39 Nm. Honda suggests using new lock nuts here. If you did remove the entire strut assemblies by unbolting the wishbone from the control arm, torque both the pinch bolts (44 Nm) and the wishbone bolts (65 Nm) with the car sitting on its own weight.



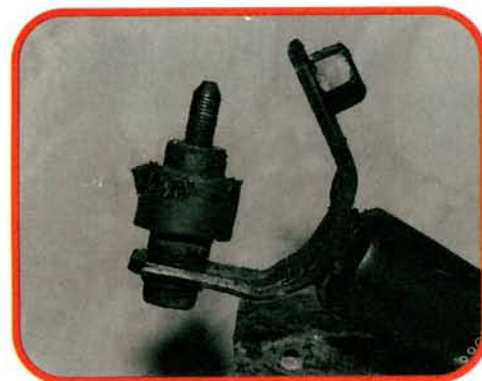
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The rear shocks should have been much simpler. Access to the upper strut cap mounting bolts doesn't require disassembling the entire interior of the car. Honda was kind enough to provide two access covers which are easy enough to reach after you drop down the rear seat back.



18

Piece of cake, huh? Now all we need to do is raise the car and remove the lower shock bolts. But the lower strut mount bolts have seized in the lower shock bushings — on both sides of the car. I mean seized! Turning the bolts turns the inner sleeves, which in turn trashes the rubber bushings.



19

We spread the ears on the old shocks far enough to remove the struts — bolts, sleeves, mangled rubber and all. Then we compress the springs, transfer parts again, and reassemble the struts. The rears aren't unlike most others, so we won't spend a lot of time with blow-by-blow descriptions here.



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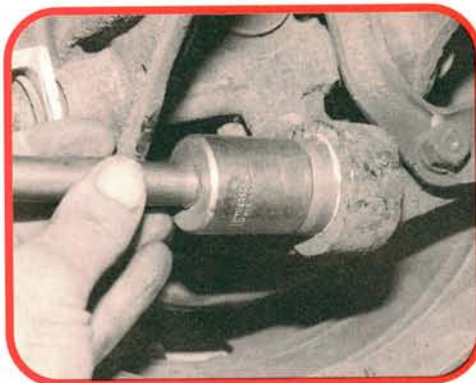
Unfortunately, the outer steels from the old mount bushings are still rusted solid in the rear spindles — which are in turn bolted to everything. An in-the-car fix is called for. We thread a sharp hacksaw blade through the old bushings, and relieve each of them by cutting a slot as shown.

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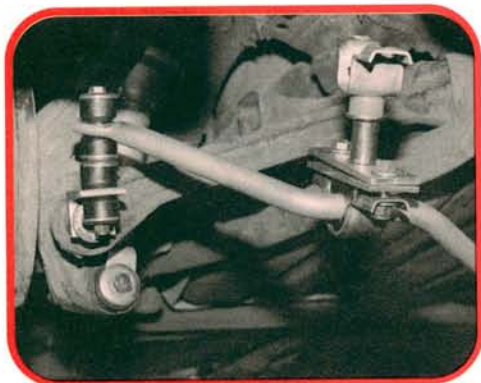
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Then we use our air chisel and a curved muffer pipe bit to roll the old bushings and collapse them. This only took several minutes a side. More importantly, it prevented us from causing damage to the spindle or bushing bores which would have resulted from heating, beating — or the use of dynamite.



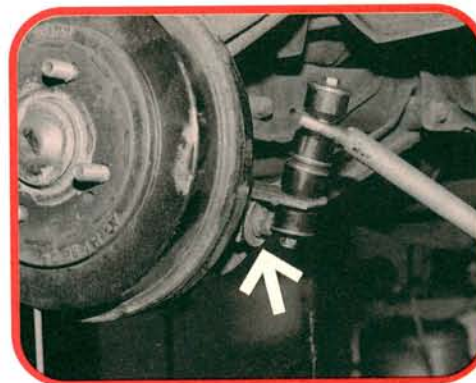
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With the old sleeves removed, we clean the bushing bores in the spindles. The new bushings are then lubed and driven in with relative ease — considering the amount of effort it took to retrieve the old ones. Torque the lower shock mounting bolts to 55 Nm with the weight of the car on the suspension.



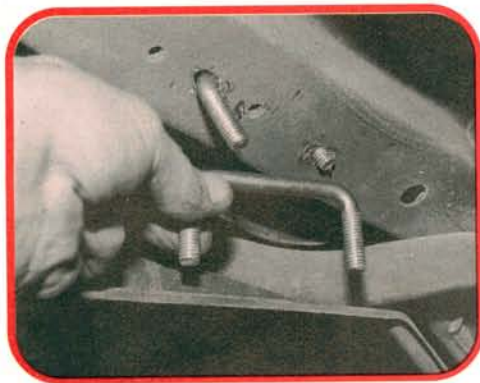
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Let's finish things off by installing that rear stabilizer we talked about earlier. ADDCO Industries sent us a complete rear stabilizer kit, including all the mounting hardware we needed. Necessary tools for the installation were: a drill and $\frac{3}{8}$ -inch drill bit, and a few wrenches.



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The stabilizer link brackets bolt to the rear control arms. We assembled the bar and links, and bolted them to the rear spindles. Then we dropped the car down on its own weight, pushed up on the bar (keeping the links vertical), and marked the spots where the mounting brackets hit the frame rails.



25

Back up in the air, we drilled two holes in each "frame" rail, and fished the u-bolts from the kit up and over through the rails as shown. (You better believe we painted and rustproofed the bare metal exposed by the drilling). Then it was just a matter of bolting the body mounts in place.



26

Here are final suggestions for a good stabilizer installation: 1) Don't overtighten the link pin bolts; 2) Make sure the link pins are vertical when the car sits on its own weight; (3) Apply some waterproof moly paste to the stabilizer bushings (arrow) where they contact the bar, or they'll squeak in a week.